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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,118	06/25/2003	Chan Ka Ming Emil	0SEM-111021	3697

7590 08/11/2004

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EXAMINER

SAWHNEY, HARGOBIND S

ART UNIT	PAPER NUMBER
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2875

DATE MAILED: 08/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/606,118

Applicant(s)

EMIL ET AL.

Examiner

Hargobind S Sawhney

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5,6,9-11 and 15-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 10 and 11 is/are allowed.
- 6) ☒ Claim(s) 1,5,6,9 and 15-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The preliminary amendment filed on May 5, 2004 has been entered. Accordingly:
 - the specification has been amended;
 - claims 1,9,10 and 11 have been amended;
 - new claims 15-20 have been added; and
 - claims 2-4,7,8 and 12-14 have been cancelled.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1,5,6,9,15-17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luen-Wai Yu (UK Patent No.: 810,256), hereinafter referred as Yu ('256), in view of Koch et al. (US Patent No.: 6,585,391 B1).

Regarding claims 1,9,15 and 20, Yu ('256) discloses a device comprising:

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- a light emitting element 4 producing divergent beam of light exiting from its tip (Figures 1 and 2, page 2, line 7);
- the divergent beam of light characterized by an optical directivity angle extending from the vertex point (Figure 2);
- an additional light exiting from the tip of light emitting element 4 in a direction extending outside of the divergent beam of light (Figures 1 and 2, page 2, lines 53-56);
- a lens 8 having a convergent portion 9 characterized by a focal point, and a non-convergent portion 10 (Figures 1 and 2, page 1, lines 33-36; and page 2, lines 18-26) - Note: Yu ('256) teaches and allows use of a double convex lens in lines 33-36 on page 1);
- the non-convergent portion 10 allowing the light emitting from the light emitting element 4 to pass through with its angle of incident same as the angle of exit – plane lens allowing no change in direction of the light passing through it - (Figures 1 and 2, page 2, lines 52-56);
- a parabolic reflector 11 having its focal point coinciding with the tip of the light emitting element 4 (Figures 1 and 2, Claim 4);
- a substantially all of the directed light, from the light emitting element 4, - passing through the convergent portion of the lens 4 (Figures 1 and 2);
- a first beam of light emerging from the double-convex convergent portion of the lens 4 in parallel light (Figures 1 and 2, page 1, lines 33-36; and page 2, lines 18-26); and

- the coincidence of the focus point of the parabolic reflector 11 and the tip of the light emitting element 4 producing at least some portion of light into a second beam of parallel light (Figure 2).

However, regarding claims 1,9,15 and 20, Yu ('256) does not teach the light-emitting element being a light-emitting element (LED). Instead, Yu ('256) teaches the use of incandescent electric lamp.

On the other hand, regarding claims 1,9 and 15, Koch et al. ('391 B1) discloses a flashlight 10 (Figure 1, column 4, lines 46 and 47) comprising an LED 31 (Figure 1, column 7, lines 18-26) as a light source.

Thus, regarding claims 1,9,15 and 20, it would be have been obvious to one of ordinary skill in the art at the time of the invention to further modify the light device of Yu ('256) by providing an LED as taught by Koch et al. ('391 B1) for the benefits and advantages of longer operational life, high energy efficient light generation, compactness with cost saving.

Regarding claims 5,6 and 20, Yu ('256) in view of Koch et al. ('391 B1) further teaches the lighting device comprising:

- the lens 4 having its non-convergent portion 10 surrounding the convergent portion 9 (Yu, Figures 1 and 2);
- a switch 5 (Yu, Figure 1, Page 2, lines 9 and 10); and

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- a battery 12 housed in a battery compartment 1 – a portion of the casing 1- (Koch, Figure 1), electrically connected to a circuit 24 (Koch, Figure 1, column 5, line 4) including the switch 28 and the light-emitting element 31 (Koch, Figure 1).

Regarding Claim 15, and claims 16 and 17, dependent on claims 15 and 1 respectively, neither combined nor individual teaching of Yu ('256) and Koch et al. ('391 B1) specifically discloses an illuminating device including an LED with the directivity angle described by the relationship D being greater than or equal to $2L \tan(A/2)$ wherein L being focal distance, and A being the directivity angle of the LED.

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the illuminating device of Yu ('256) in view of Koch et al. ('391 B1) by providing relative dimensions of D and L with respect to the directivity angle A for directing the light from the LED in predetermined proportion, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2nd 272, 205 USPQ 215 (CCPA 1980).

4. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Luen-Wai Yu (UK Patent No.: 810,256 in view of Koch et al. (US Patent No.: 6,585,391 B1) as applied to Claim 1 above, and further in view of Rejc (US Patent No.: 4,853,531).

Neither combined nor individual teaching of Yu ('256) and Koch et al. ('391 B1) specifically discloses an illuminating device including an LED with the directivity angle about 20° .

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On the other hand, Rejc ('531) discloses an optical control device comprising an LED characterized with a directivity angle of about 20^0 (column 7, claim 10).

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the illuminating device of Yu ('256) in view of Koch et al. ('391 B1) by providing the LED characterized with a directivity angle of about 20^0 as taught by Rejc ('531) for benefit and advantage of directing the light from the LED in predetermined proportion.

5. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Luen-Wai Yu (UK Patent No.: 810,256 in view of Koch et al. (US Patent No.: 6,585,391 B1) and Rejc (US Patent No.: 4,853,531).

Yu ('256) discloses a device comprising:

- a light emitting element 4 producing divergent beam of light exiting from its tip (Figures 1 and 2, page 2, line 7);
- the divergent beam of light characterized by an optical directivity angle extending from the vertex point (Figure 2);
- a lens 8 having a convergent portion 9 characterized by a focal point (Figures 1 and 2, page 1, lines 33-36; and page 2, lines 18-26) - Note: Yu ('256) teaches and allows use of a double convex lens in lines 33-36 on page 1);
- a substantially all of the directed light, from the light emitting element 4, - passing through the convergent portion of the lens 4 (Figures 1 and 2);

- the light-emitting element 4 being coinciding with the focal point of the lens 8 (Figure 1);
- a first beam of light emerging from the double-convex convergent portion of the lens 4 in parallel light (Figures 1 and 2, page 1, lines 33-36; and page 2, lines 18-26); and

However, Yu ('256) does not teach the light-emitting element being a light-emitting element (LED). Instead, Yu ('256) teaches the use of incandescent electric lamp.

On the other hand, Koch et al. ('391 B1) discloses a flashlight 10 (Figure 1, column 4, lines 46 and 47) comprising an LED 31 (Figure 1, column 7, lines 18-26) as a light source.

It would be have been obvious to one of ordinary skill in the art at the time of the invention to further modify the light device of Yu ('256) by providing an LED as taught by Koch et al. ('391 B1) for the benefits and advantages of longer operational life, high energy efficient light generation, compactness at lowest evaluated cost.

In addition, neither combined nor individual teaching of Yu ('256) and Koch et al. ('391 B1) specifically discloses an illuminating device including an LED with the directivity angle about 20°.

On the other hand, Rejc ('531) discloses an optical control device comprising an LED characterized with a directivity angle of about 20° (column 7, claim 10).

It would be have been obvious to one of ordinary skill in the art at the time of the invention to modify the illuminating device of Yu ('256) in view of Koch et al. ('391 B1)

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by providing the LED characterized with a directivity angle of about 20^0 as taught by Rejc ('531) for benefit and advantage of directing the light from the LED in predetermined proportion.

Allowable Subject Matter

6. Claims 10 and 11 are allowed.

The prior art of record, including, Luen-Wai Yu (UK Patent No.: 810,256), Koch et al. (US Patent No.: 6,585,391 B1) and Rejc (US Patent No.: 4,853,531), does not show or suggest the applicant's invention as claimed. Specifically, the prior art of record does not teach an illuminating device combining:

- a lens including a convergent and non-convergent portions and a lens flange as recited in Claim 10;
- the connection of a parabolic reflector to a printed circuit board coinciding the focal point of the parabolic reflector with the transparent tip of the LED as recited in Claim 10;
- the engagement of a housing flange and the lens flange positioning the LED at the focal point of the convergent portion of the lens as recited in Claim 10.

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The above-indicated combination, including relative poisoning of the parabolic reflector, printed circuit board and the lens fulfilling the optical requirements essential for the operation of the device, makes this Claim allowable over prior art.

Claim 11 is necessarily allowed because of its dependency on the allowed base Claim 10.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Mueller et al. (U.S. Patent No. 6,686,691 B1), Mcdermott (U.S. Patent No. 6,361,190 B1), Matsumoto Et al. (U.S. Patent No. 6,260,994B1), Talamo (U.S. Patent No. 6,244,733 B1), Turnbull et al. (U.S. Patent No. 5,803,579), Doiron et al. (U.S. Patent No. 5,698,866) and Mouyard et al. (US Patent No.: 4,336,580)

Each of the above-indicated prior arts discloses an illuminating device comprising some of the claimed features claimed by the applicant.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hargobind S Sawhney whose telephone number is 571-272-2380. The examiner can normally be reached on 6:15 - 2:45.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on 571-272-2378. The fax phone numbers

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for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-2956.

HSS

8/5/2004

A handwritten signature in black ink, appearing to read 'T. M. Sember', with a long horizontal flourish extending to the right.

THOMAS M. SEMBER
PRIMARY EXAMINER